

Amendments to the Claims

Claims 1-22 Cancelled

Claim 23 (previously presented) A composite comprising a metallic substrate and a predominantly amorphous and hermetic aluminophosphate film in which the film and the substrate are adhered through a phosphate-bonded metal oxide, an oxide layer linked to phosphate groups, or mixtures thereof.

Claim 24 (previously presented) A composite of claim 23 in which the metal substrate contains iron, aluminum, magnesium, zinc, silver, copper, or alloys of steel, titanium, nickel, or copper.

Claim 25 (previously presented) A composite of claim 23 in which the metal substrate is a steel alloy.

Claim 26 (previously presented) A composite of claim 23 which has been cured at a temperature of at least 300 °C.

Claim 27 (previously presented) A composite of claim 23 in which the predominantly amorphous aluminophosphate film contains $[-\text{PO}_4-\text{AlO}_4-\text{AlO}_6-\text{AlO}_4-\text{PO}_4-]$ fragments.

Claim 28 (previously presented) A composite of claim 23 in which the film contains carbon, metal, or metal compound nanoparticles.

Claim 29 (previously presented) A composite of claim 28 in which the nanoparticles have dimensions of about 1 to about 500 nm.

Claim 30 (currently amended) A composite of claim 23 in which the substrate is a steel alloy and the metal oxide is an iron oxide or a chromium oxide.

Claim 31 (previously presented) A composite of claim 23 wherein the film is about 0.05 micron to about 10 microns thick.

Claim 32 (previously presented) A composite of claim 23 wherein said film is about 0.1 micron to about 1.0 micron thick.

Claim 33 (previously presented) A composite of claim 23 further including an organic component on said film.

Claim 34 (previously presented) A composite of claim 23 wherein said film is opaque to visible light.

Claim 35 (previously presented) A composite of claim 23 wherein said film is transparent to visible light.

Claim 36 (previously presented) A composite of claim 23 which is non-stick against molten metal.

Claim 37 (previously presented) A composite of claim 23 having a surface energy of about 32 mJ/m².

Claim 38 (currently amended) A composite comprising a metallic substrate and a predominantly amorphous and ~~hermitic~~ hermetic aluminophosphate film containing [$\text{—PO}_4\text{—AlO}_4\text{—AlO}_6\text{—AlO}_4\text{—PO}_4\text{—}$] fragments, wherein the film and the substrate are adhered through a phosphate-bonded metal oxide, an oxide layer linked to phosphate groups, or mixtures thereof.

Claim 39 (previously presented) A composite of claim 38 in which the film contains carbon, metal, or metal compound nanoparticles.

Claim 40 (previously presented) A composite of claim 38 in which the nanoparticles have dimensions of about 1 to about 500 nm.

Claim 41 (previously presented) A composite of claim 38 has been cured at a temperature of at least 300 °C.

Claim 42 (previously presented) A composite of claim 38 in which the metal substrate is a steel alloy.

Claim 43 (new) A composite comprising a metallic substrate and a predominantly amorphous aluminophosphate film in which the film and the substrate are adhered through a phosphate-bonded metal oxide, an oxide layer linked to phosphate groups, or mixtures thereof and in which the aluminophosphate contains Al-O-Al bonds.

Claim 44 (new) A composite of claim 43 in which the aluminophosphate film is halide free.